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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,243	02/28/2002	Marcos N. Novaes	POU998019US2	1652
23405	7590	10/11/2005	EXAMINER	
HESLIN ROTHENBERG FARLEY & MESITI PC 5 COLUMBIA CIRCLE ALBANY, NY 12203			JEAN GILLES, JUDE	
			ART UNIT	PAPER NUMBER
			2143	

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/085,243

Applicant(s)

NOVAES, MARCOS N.

Examiner

Jude J. Jean-Gilles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 02/28/2002.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

This office action is responsive to communication filed on 02/28/2002. Claimed priority is granted from divisional application No. 09238202 with a priority date of 01/27/1999.

Information Disclosure Statement

1. The references listed on the Information Disclosure Statement submitted on 02/28/2002 have been considered by the examiner (see attached PTO-1449A).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 5, 9, 10 and 11** are rejected under 35 U.S.C. 102(e) as being anticipated by Latif et al (Latif), Patent No. 6,393,483 B1.

Regarding **claim 1**, Latif discloses a processing method for a distributed computing environment having multiple networks of computing nodes employing multicast messaging, each network having at least one computing node, at least one computing node of said multiple networks of computing nodes functioning as a multicast routing node (fig. 2; column 5, lines 29-67), said method comprising:

automatically responding to a failure at said at least one computing node functioning as said multicast routing node to reassign said multicast routing function (column 5, lines 10-28); and

wherein said automatically responding comprises dynamically reconfiguring said distributed computing environment to replace each failed multicast routing node of said at least one multicast routing node with another computing node of said multiple networks of computing nodes to maintain multicast message reachability to all functional computing nodes of said distributed computing environment (column 5, lines 10-67; column 7, lines 1-55; column 11, lines 21-45).

Regarding **claim 5**, Latif discloses a processing system for a distributed computing environment, said processing system comprising: multiple networks of computing nodes within the distributed computing environment, said multiple networks of computing nodes employing multicast messaging, with each network having at least one computing node, and at least one computing node of the multiple networks of computing nodes functioning as a multicast routing node (fig. 2; column 5, lines 10-67; column 6, lines 1-47);

means for automatically responding to a failure at said at least one computing node functioning as said multicast routing node to reassign said multicast routing function, wherein said means for automatically responding comprises means for dynamically reconfiguring said distributed computing environment to replace each failed multicast routing node of said at least one multicast routing node within another computing node of said multiple networks of computing nodes to maintain reachability of

multicast messages to all functional computing nodes of said distributed computing environment (column 5, lines 10-67; column 7, lines 1-55; column 11, lines 21-45).

Regarding **claim 9**, Latif discloses a processing system for a distributed computing environment comprising: multiple networks of computing nodes within the distributed computing environment, said multiple networks of computing nodes employing multicast messaging, with each network having at least one computing node, and at least one computing node of the multiple networks of computing nodes functioning as a multicast routing node (fig. 2; column 5, lines 10-67; column 6, lines 1-47);

a processor associated with the distributed computing environment; and
code executable by said processor associated with said distributed computing environment, said code causing said processor to effect (fig. 11; item 1116; column 16, lines 19-61):

automatically responding to a failure at said at least one computing node functioning as said multicast routing node to reassign said multicast routing function (column 5, lines 10-67; column 6, lines 1-47); and
wherein said automatically responding comprises dynamically reconfiguring said distributed computing environment to replace each failed multicast routing node of said at least one multicast routing node within another computing node of said multiple networks of computing nodes to maintain reachability of multicast messages to all functional computing nodes of said distributed computing environment (column 5, lines 10-67; column 7, lines 1-55; column 11, lines 21-45).

Regarding **claim 10**, Latif discloses an article of manufacture comprising: a computer program product comprising a computer usable medium having computer readable program code means therein for maintaining multicast message reachability within a distributed computing environment having multiple networks of computing nodes employing multicast messaging, each network having at least one computing node, and at least one computing node of the multiple networks of computing nodes functioning as a multicast routing node, said computer readable program code means in said computer program product comprising:

(i) computer readable program code means for causing a computer to effect automatically responding to a failure at said at least one computing node functioning as said multicast routing node to reassign said multicast routing function (column 5, lines 10-67; column 6, lines 1-47); and

(ii) wherein said computer readable program code means for causing a computer to effect automatically responding comprises computer readable program code means for causing a computer to effect dynamically reconfiguring said distributed computing environment to replace each failed multicast routing node of said at least one multicast routing node with another computing node of said multiple networks of computing nodes to maintain multicast message reachability to all functional computing nodes of said distributed computing environment (column 5, lines 10-67; column 7, lines 1-55; column 11, lines 21-45).

Regarding **claim 11**, Latif discloses the article of manufacture of claim 10, wherein said computer readable program code means for causing a computer to effect

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dynamically reconfiguring comprises computer readable program code means for causing a computer to effect ensuring only one computing node of each group of computing nodes functions as a multicast routing node for said group of computing nodes, thereby avoiding redundancy in routing of multicast messages between any two networks of computing nodes(column 5, lines 10-67; column 7, lines 1-55; column 11, lines 21-45).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2-4, and 6-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Latif in view of Lim et al (Lim), U.S. Patent No: 5,938,732.

Regarding **claim 2**, Latif teaches the invention substantially as claimed. Latif fully discloses the processing method of claim 1 and further teaches the processing method of claim 1, wherein said at least one computing node functioning as said multicast routing node comprises multiple computing nodes functioning as multiple multicast routing nodes (column 5, lines 10-67; column 7, lines 1-55; column 11, lines 21-45); however, Latif does not specifically disclose said distributed computing environment comprising a plurality of groups of computing nodes, each group comprising one network of said multiple networks, and wherein each computing node

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functioning as multicast routing node comprises a group leader for multicast routing of a respective group of computing nodes, each group leader being coupled via a virtual interface to at least one other group leader of a group of computing nodes of the distributed computing environment, and responding automatically responding to said failure comprises automatically selecting a new group leader from functioning computing nodes of the respective group of computing nodes having said group leader failure.

In the same field of endeavor, Lim disclose a method in which "... hosts in groups whereas, each group has a leader...and when a host fails, the leader will detect that the service addresses that were originally served by the failed hostand the leader reassigns these unserved addresses to other available hosts with a group...and the reassignment may be done randomly, or may be made on a load balancing scheme, through any other suitable method see [see Lim; column 6, lines 7-63].

Accordingly, it would have been obvious to one of ordinary skill in the networking art at the time the invention was made to have incorporated Lim's teachings of using a group leader in the reassignment process, with the teachings of Latif, for the purpose of "*providing increased load balancing transmit throughput to networks... while providing resilient backup capabilities that enables continuous data transferring connections when port failures occur...*" as stated by Latif in lines 30-37 of column 2. By this rationale, **claim 2** is rejected.

Regarding claim 3, the combination of Latif-Lim et al discloses the processing method of claim 2, wherein said dynamically reconfiguring comprises establishing a virtual interface from said new group leader to at least one other group leader within the distributed computing environment, said virtual interface comprising a multicast messaging tunnel between said group leaders, said multicast messaging tunnel being established using an mrouted daemon [see Lim; fig. 1a, item 20; column 8, lines 39-65]. The same motivation that was used for claim 2 is also valid for this claim [see Latif, column 2, lines 30-37].

Regarding claim 4, the combination of Latif-Lim et al discloses the processing method of claim 3, wherein said dynamically reconfiguring comprises ensuring only one computing node of each group of computing nodes is a group leader functioning as said multicast routing node for said group of computing nodes, thereby avoiding redundancy in routing of multicast messages between any two networks of computing nodes [see Lim; fig. 1a, item 20; column 8, lines 39-65; column]. The same motivation that was used for claim 2 is also valid for this claim [see Latif, column 2, lines 30-37].

Regarding claim 6, the combination of Latif-Lim et al discloses the system of claim 5, wherein said at least one computing node functioning as said multicast routing node comprises multiple computing nodes functioning as multiple multicast routing nodes and said distributed computing environment comprises a plurality of groups of computing nodes, each group comprising one network of said multiple networks, and wherein each computing node functioning

as multicast routing node comprises a group leader for multicast routing of a respective group of computing nodes, each group leader being coupled via a virtual interface to at least one other group leader of a group of computing nodes of the distributed computing environment, and wherein said means for automatically responding to said failure comprises means for automatically selecting a new group leader from functioning computing nodes of the respective group of computing nodes when said failure comprises a group leader failure.

[see Lim; fig. 1a; column 8, lines 39-65].

Regarding claim 7, the combination of Latif-Lim et al discloses the system of claim 6, wherein said means for dynamically reconfiguring comprises means for establishing a virtual interface from said new group leader to at least one other group leader within the distributed computing environment, said virtual interface comprising a multicast messaging tunnel between said group leaders, said multicast messaging tunnel being established using an mrouted daemon [see Lim; fig. 1a; column 8, lines 39-65].

Regarding claim 8, the combination of Latif-Lim et al discloses the system of claim 7, wherein said means for dynamically reconfiguring comprises means for ensuring only one computing node of each group of computing nodes is a group leader functioning as said multicast routing node for said group of computing nodes, thereby avoiding redundancy in routing of multicast messages between any two networks of computing nodes [see Lim; fig. 1a; column 8, lines 39-65].

Conclusion

6. Any inquiry concerning this communication or earlier communications from examiner should be directed to Jude Jean-Gilles whose telephone number is (571) 272-3914.

The examiner can normally be reached on Monday-Thursday and every other Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley, can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3719.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Jude Jean-Gilles

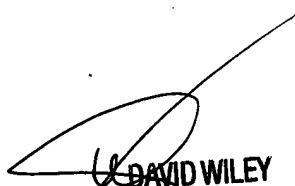
Patent Examiner

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JJG



September 26, 2005



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